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extended attributes

Phoenix OS/2 Society

The magazine of the OS/2 community

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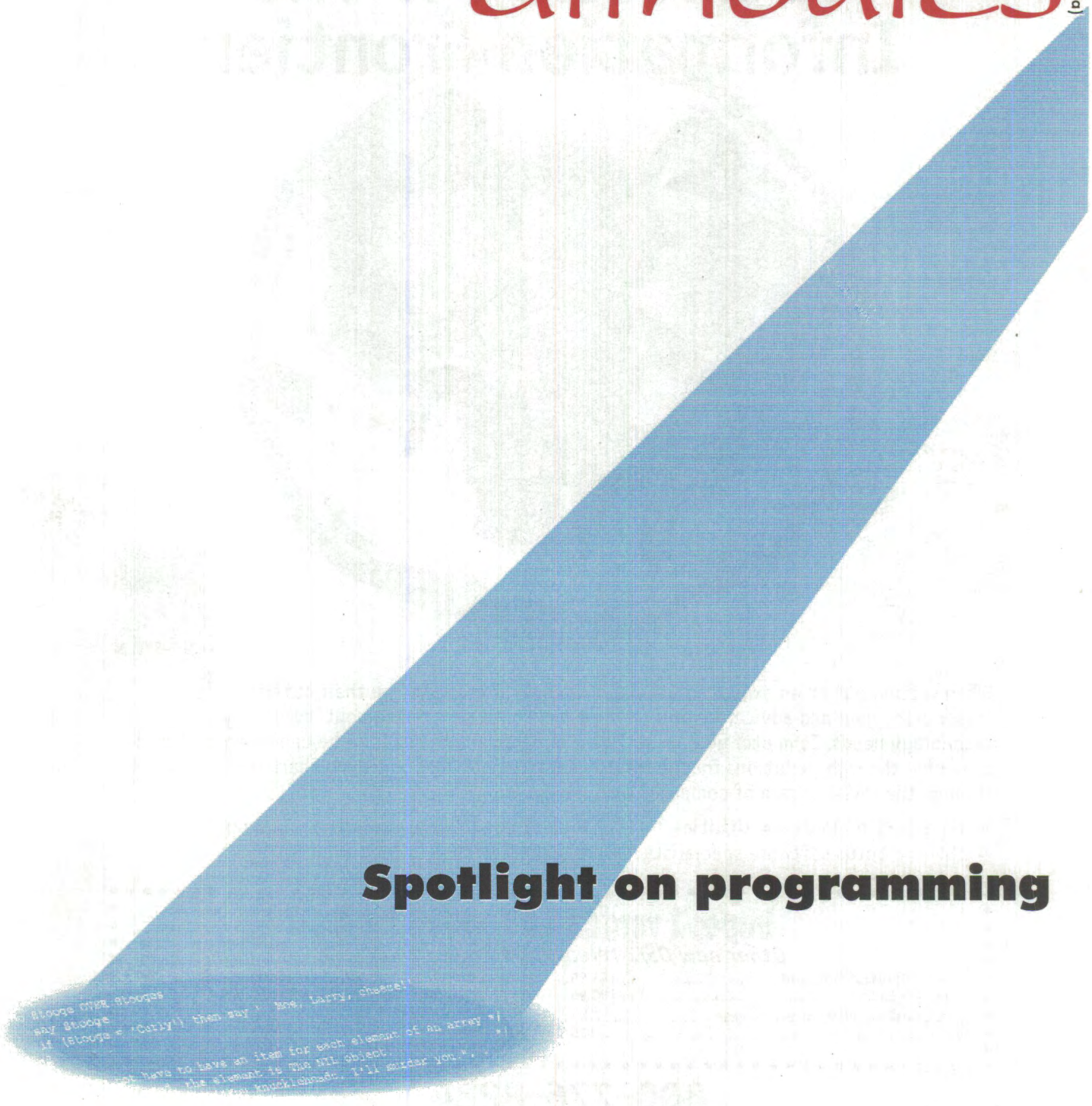
Spotlight on programming



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For change of address, send an email to editor@possi.org or mail the form in the center of the magazine to the Phoenix OS/2 Society, Inc. extended attributes is mailed at bulk rate—the US Post Office will not forward!

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comment

Speech recognition: mute after one year?

by Bill Schindler, Editor-in-chief

Early last year we did an issue of extended attributes focusing on speech recognition. It wasn't all that long after OS/2 Warp 4 had been released and many of us were experimenting to see how speech could fit into our daily computer use.

Now, almost a year-and-a-half later, most of the OS/2 users that I know don't use speech. In fact, many of us don't even have it installed on our systems any more.

Why?

I think that many of us discovered—once the "coolness" wore off—speech was a rather inefficient and unreliable way of navigating the desktop. Most OS/2 users are old hands at using a mouse and a keyboard; navigating the desktop by voice is usually slower and fraught with peril. (Mis-recognized words could have disastrous effects.)

Another discovery was that writing with speech is *different* from writing with a keyboard. Speech seems to require different mental machinery, which interferes with—or at least slows—the writing process.

So, many of us have let speech recognition lie fallow.

One of the real problems is that current user interfaces are designed for the mouse and keyboard. Speech needs a different user interface from the standard GUI. Without that specialized interface, you are forced to your voice to do what a mouse and keyboard are much better at doing. (Try using the "File save" dialog with speech and you'll know what I mean.)

If you are you still using speech recognition, please send me an email. I'd like to know how you are using it.

Help wanted

We are looking for a volunteer to take over one of our most important jobs for the magazine: Advertising Manager.

The Ad Manager contacts potential advertisers, promotes advertising in the magazine, and keeps track of current advertisers. This is definitely a job that can be handled from anywhere, since most of the work is done by email and fax.

If you are interested, please send an email to `editor@possi.org`.

Phoenix OS/2 Society, Inc

The Phoenix OS/2 Society, Inc (POSSI) is an organization of computer users with an interest in IBM's OS/2 operating system.

Phoenix OS/2 Society, Inc.
5515 N 7th St, Ste 5-133
Phoenix, AZ 85014-2585
Voice mail: 602-949-4341
Web: http://www.possi.org

President
Dick Krueger — president@possi.org

Vice-president
Lee Baldwin — lbaldwin@primenet.com

Treasurer
Stan Hall — srhall@ibm.net

Program chair
Esther Schindler — esther@bitranch.com

Board members at large
Sam MacDonald — samemac@ibm.net
Judy McDermott — bri@gt-online.com

Membership officer
Evelyn Hitch — hitch@ibm.net

extended attributes

Editor
Bill Schindler — editor@possi.org

Assistant editors
Susan Malling — susan@perfectniche.com
Esther Schindler — esther@bitranch.com

Reviews editor
Craig Greenwood — reviews@possi.org

SIG news editor
Ernie Fisch — ernfisch@indirect.com

Contributing editors
Craig Greenwood — craig@possi.org
Marilyn Pizzo — mpizzo@ibm.net
Joel Frey — jomafraz@primenet.com
Esther Schindler — esther@bitranch.com

Cartoonist
Ron Boe — ronsueboe@sprintmail.com

Advertising manager
Frank Pizzo — fpizzo@ibm.net

Advertisers: Contact Frank Pizzo for an advertising rate sheet, insertion order, and

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In Requiem Byte

by Esther Schindler

Esther Schindler is program chair of the Phoenix OS/2 Society. In real life, she's Technology Editor for ZD's *Sm@rt Reseller* magazine. You can reach her at esther@bitranch.com.

The pages are brittle and a little dusty, which is no surprise. For most of the sixteen years since we bought it, the magazine has been stored in a basement or a garage. Nonetheless, despite (at last count) eleven moves, we've carted along this August 1992 copy of *Byte* magazine, and many of its brethren.

The August 1992 issue's theme was Logo—an obscure language back then, and even more obscure today. Articles included "Designing computer-based microworlds," by R.W. Lawler, and "A general-purpose I/O board for the TRS-80 Models I and II," by William Barton. Jerry Pournelle's User Column (pre-Chaos Manor) was about "Semidisk, software tools, the BDOS blues, power, and LISPs."

On the inside front cover was an ad for Cromemco selling a system for $5,495: "With the System One/DPU combination, you get tremendous expandability. Right now you can have up to 2 MB of RAM storage." Mountain Computer advertised a 5 MB hard disk system for $2,695. And a letter to the editor began, "I find I grow tired of the Unix-versus-CP/M argument." I guess some things never change.

In one era, out the other

As you probably know by now, *Byte* has closed its doors. CMP purchased *Byte* from McGraw-Hill, along with a grab bag of other publications, and shut the *Byte* doors about a month later. The July issue is the last one. CMP says that it will relaunch *Byte* some time this fall; I'm not in a position to comment or know, since I'm an employee of CMP's biggest competitor, Ziff-Davis. (As my father would say, Macy's does *not* tell Gimbel's.)

It is, however, the end of an era. I don't mean just for the one publication, or for the fans of Chaos Manor, even though friends and longtime *Byte* authors like Wayne Rash and Steven Vaughan-Nichols are grieving. *Byte* carved out a niche, when all there was to carve with was stone knives… and then they abandoned that niche. In doing so, the computing community has lost a great deal.

Back in *Byte*'s heyday, a "microcomputer user" meant "someone who programs" or at least "someone who tinkers with his system." Steve Circia led readers through building a Microvox text-to-speech synthesizer in the September 1992 issue, and the Heath/Zenith dual-floppy disk drive was reviewed with the assumption that you'd install it yourself. The computer industry had the underlying expectation that if you didn't know how the system worked, you were on a dedicated quest to *learn*. The magazines served as a guide and a road map, where "how to think about this" was as important as "is this the right tool?"

Compare that to the wizard-enhanced applications sold nowadays. A "computer user" now means the target audience for *Artificial Intelligence for Dummies*.

One of the greatest struggles we have as OS/2 users—and one that I think most of us are unaware of—is that most of us are from the old school. We chose OS/2, for the most part, because of something in the way it worked (flexibility, consistency, robustness) instead of the way that it appeared. We made our choice from the tinkerer's point of view. Most of us are still in the "early adopters" school; there's a good chance that you don't have the cover screwed down on your PC. (Don't blush. Neither do I.)

Byte was, initially, for that set of readers. Back then, that was the only kind of computer users there were. The magazine succeeded best when it had options to explore, when nobody knew which technology would prevail, and when we were all full of wonder at what we could *do*. As the computer industry evolved to encompass Lotus 1-2-3 users, so did the magazine. Eventually, when the IBM PC became the obvious "winner," *Byte* tried to reinvent itself as another *PC Magazine*. Except that *PC Magazine* was much better at being *PC Magazine* than *Byte* could ever be; Bill Machrone, who took over as *PC Magazine* editor not long after the publication went live, purposely designed the editorial mission as "a cross between *Road & Track* and *Cosmopolitan*." *Byte* has been on a downhill slope ever since.

Byte's demise is a symptom of something larger that the industry has lost: that sense of wonder. Computer magazines are written, now, for the spike in the bell curve, where "computer user" means "where do I click for the computer to do it all?" Those of us who are interested in *how* the computer does what it does, and *how to think about* the approaches that the computer might take in doing it, are usually left out in the cold. When was the last time you saw a cover story on Logo, or on any other topic that was not already a hot buzzword, just because it was interesting? How many magazines explain how a file system works under the covers, or examines the theory behind writing useful benchmark programs?

This bit me personally, just the other day.

Career Encounters: Women in Computing

I don't make a big deal out of my feminism, or engage in long pointless debates about why there are relatively few women in the computing fields. I've long believed that equality means that my gender isn't noteworthy. Nonetheless, I stay aware of issues in regard to women in computing; one of my favorite pieces was an article I wrote for *Software Development* back in 1995, called "Where are the women?"—but my pride was because I discovered a different answer than the one most readers expected.

I also lurk on the "systers" listserv, set up by Anita Borg for technical women in computing.

When I learned that Anita Borg was involved in putting together a video called "Career Encounters: Women in Computing," I went out of my way to ask for a review copy, hoping that I'd be able to find a reseller angle for my "day job" at *Sm@rt Reseller*.

I watched the half-hour video carefully, but I couldn't find a single reason that resellers would care; it simply didn't fit.

However, the video is really good; I wish that I'd seen such a thing when I was 14 years old and wasn't sure what I wanted to do with my life. "Career Encounters: Women in Computing" is basically vignettes of four or five women involved in different computing careers, presented with an attitude that manages to be warm and supportive without ever venturing into... oh, I don't know what to call it, but we've all seen that particular high-pressure affirmative action attitude that makes us roll our eyes.

The video makes it clear that you don't have to be a math whiz to be involved in computing, and shows that the computer professions offer a wide range of opportunities. That's a nice message, and it's a refreshing break from relentless technology.

(If you're interested in the video for your daughters, it's available from Davis-Gray Inc, `www.davis-grayinc.com`, 114 Forrest Ave, Narbeth, PA 19072. Phone 610-667-3777, fax 610-667-5466.)

This video would be great for growing girls to discover, and in my experienced opinion, it's worth a 300–400 word notice... but I could do nothing with it.

So I turned to editor friends at a few other ZD publications, figuring that, say, *Computer Shopper* or *Internet Computing* might be able to give the video a short look. In both cases, though, the magazines don't have a slot where such a video would fit. This is "how to think about computing" (and a girl's role in it)—but the publications are so product oriented that even my feminist friends can't find a spot.

It's not that the video itself is unappealing; three of the four women with whom I corresponded offered to take it off my hands. One has an eighth-grader of her own, another reports that a Girl Scout troop has been wanting a tour of ZD Labs, and this would be a great tool for them... obviously, we all think it's useful. It's just a square peg that doesn't fit into the round hole in the magazines—whose job, it once was, to tell us what we needed to know.

I think that's one reason that I've continued to write for extended attributes, and why I participate in user group publications. From the beginning—when Byte would list user group meetings and write articles about the Trenton Computer Fair—users have been there to guide and advise one another. If the publications have become such big businesses that they can no longer do so, then it makes the role of the user group that much more important.

.press release

Stardock announces Object Desktop 2.0

Stardock Systems, Inc announced Object Desktop 2.0 at E3. The previous version of the advanced OS/2 desktop environment is the most popular third party OS/2 product ever created for OS/2. Previously sold as Object Desktop 1.5 Standard and Professional editions, Object Desktop 2.0 will merge the features of both editions into Object Desktop 2.0.

"With the changing OS/2 market, we decided the time was right to put our focus purely on power users and corporate desktops," said Brad Wardell, president of Stardock.

The new version boasts a completely new look over its predecessor, greatly improved performance, and increased compatibility with OS/2 Warp 4. Stardock has also added features and improvements suggested by OS/2 users during the time between Object Desktop 1.5's release and today. New features include a revamped Control Center that includes "lay outs" for setting up virtual desktops, real-time Internet performance monitoring capabilities, and virtual desktop start up features (allowing users to launch a program into a particular virtual desktop). The Enhanced folder has also received some new features, including a tool bar to bring OS/2's GUI features up and beyond what is expected to be available on Windows NT 5.

"OS/2's user interface is still state of the art, but there were a few areas where the upcoming NT 5 would have given NT some user interface advantages. With Object Desktop 2.0, we've nipped that in the bud and OS/2 will continue to have the world's most advanced GUI," said Wardell.

Object Desktop 2.0 is the result of almost two years effort by Stardock's OS/2 development team and the culmination of their advanced user interface technologies.

A full look at the features of Object Desktop 2.0 can be found on Stardock's Web site at `www.stardock.com`. Object Desktop 2.0 will list for $99.95. The upgrade price for users of Object Desktop will be $55 and the upgrade price from Object Desktop Professional will be $39.

An early experience program will be available starting at the end of June for users who want to have input on the new version. Only users of Object Desktop Professional may participate, since the early experience version only works on systems with Object Desktop Professional installed. The early experience program costs $35 to join and includes a final version of Object Desktop 2.0 when it arrives.

Stardock expects to begin shipping Object Desktop 2.0 in early August. Users can pre-order it or join the early experience program by visiting the Web site and clicking on the Object Desktop 2.0 link.

review

DH_CLIP/SAVE2: an essential utility

by Brian Grawburg

I suspect I'm like most *extended attributes* readers. My POSSI email folder (like a couple of other folders) is taking up more and more hard drive space and is becoming unmanageable. I hesitate to delete many of the posts because they discuss an issue that, while I don't currently have a direct interest, I suspect that I may be interested in the future.

I've tried to find an easy way to combine common posts into a single document. I've never been happy with my efforts. Then I read a short note in the May issue of *extended attributes* about a $10 shareware program, DH_ClipSave/2, that seemed to offer the perfect solution. Within two minutes of trying it, I knew this was it!

Brian Grawburg (grawburg@bbnp.com) lives in Wilson, NC, where he does computer consulting and custom Lotus applications. He's been an OS/2 user for six years.

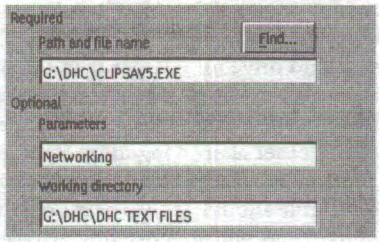
When DH_Clipsave/2 is installed, it creates a program object on the desktop, ClipSave. When you double click on the object initially, it creates a text file named ClipSave.txt, containing whatever happened to be in your clipboard. Copy something else and double click again and the new clipboard contents are appended to the same file.

The real beauty of this simple application is that I can create multiple objects, each with a different name, and save the clipboard contents to different files. At a later date, I can edit the text file with my word processing program.

Here's how I use DH_ClipSave/2 for my POSSI email.

When the registered file is unzipped it creates several executable files, each CPU-specific. One is for a 386, another for a 486, and another file for a 586/686. The 585/686-specific is named ClipSav5.exe; I simply deleted the others. Within the folder DHC I created another folder titled DHC Text Files, in which to store the initial unedited files and the topic-specific program objects.

Next, I created a new program object from ClipSav5.exe, and named it Networking. In its Properties notebook, I entered the name of the text file I wanted (Networking) and where the text file and the program object were to be located, like this:



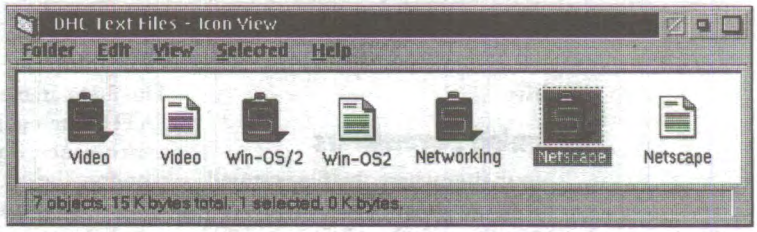
I continued this process for several other topics, and ended up with a folder that looks like the one shown below.

To save a post, I copy the text I want to the clipboard; in PMMail, it's Edit, Copy. I double click on the clipboard icon for the subject file (such as Networking or Video). The contents of the clipboard are appended to the existing file. If you're using the registered version (and you certainly should be!) a time and date stamp is inserted between the previous material and your new addition.

When I finish with the topic I can edit the text file using EPM or my word processing program. I can then print it or save it.

One minor caution, though. If you edit the text file while you are still adding new material, make sure the text editor doesn't add a hex 1A as an end-of-file indicator. While this doesn't cause any problem with DH_ClipSave/2 you won't be able to read any appended data in that editor, since DH_ClipSave doesn't remove the hex 1A. As far as I know neither EPM, DeScribe, or WordPro add the hex 1A.

This is absolutely an essential utility and well worth the $10. It can ordered through BMT Micro.



two warped

Swapper . Data 2

by David Both

This month I continue my discussion of how to tune the swapper file, SWAPPER.DAT, for best performance.

Location, location, location

Tuning the SWAPPER.DAT file involves selecting the proper storage location as well as some other factors.

The ideal location for the SWAPPER.DAT file is on a very fast hard drive, formatted HPFS, where no other files are located. Placing SWAPPER.DAT on a drive by itself ensures that swapping activity will not interfere with other disk operations and that they, in turn, will not interfere with swapping activity. Because dedicating a hard drive to the swap file is an expensive proposition, few can afford the hardware necessary to do so, and other alternatives are used.

The SWAPPER.DAT file should be located on a fast hard disk which has been formatted for HPFS for best speed. If possible, dedicate a separate partition on the drive to the swap file to ensure that the swap file is 100% contiguous. The swap file partition should be somewhere around the seek center of the disk if there is more than one other partition on the same hard drive. Locating the swapper file near the seek center of the disk minimizes head movement between the swap partition and the other partitions on the drive.

Tuning parameters

No matter where the file is stored, the SWAPPATH statement in CONFIG.SYS is used to define the location of SWAPPER.DAT and to do some tuning, as shown in the following example.

```
SWAPPATH=C:\OS2\SYSTEM 2048
4096
```

The two parameters on the SWAPPATH statement are very important but for different reasons.

The second parameter (4096 in the example) preallocates SWAPPER.DAT at a size of 4 MB. Preallocating the swapper file saves time when swapping occurs, because it eliminates the time required for OS/2 to actually allocate the disk space. Preallocating also helps to ensure that the swap file is as contiguous as possible when it is located on a drive partition with other files.

Preallocating SWAPPER.DAT does not eliminate the time required to allocate the disk space; rather, it moves that time cost to the time of boot. Also, if your swap file grows beyond the amount preallocated, you will again incur disk space allocation time. You should check the size of your swap file occasionally to see whether it has grown beyond the preallocated size and by how much it has grown.

If SWAPPER.DAT is significantly larger than the preallocated size, consider increasing its preallocated size. You might also consider installing more RAM in your system if the total swap file size becomes 50% to 75% or more of the amount of your currently installed RAM. Ideally, your swapper file should be between 10% and 20% of the amount of RAM installed in your system. Some swapping activity is desirable; it ensures that your RAM is being fully utilized (you have not paid for more than you needed), and that those data and program pages which have been loaded into your system RAM (but which are rarely or never used) are swapped out to the disk.

Saving Data

The first parameter in the SWAPPATH statement does not affect performance, but is vitally important nonetheless.

Assume for a moment that you are working on a major spreadsheet and that, along with other programs currently running on your system, it consumes all of your RAM and most of the free disk space available for the SWAPPER.DAT file to grow. At this point you want to import some of the data in the spreadsheet into a DeScribe document. You load DeScribe, open the document, make a couple changes, and import the data from the spreadsheet. Now save the revised document. This is the point at which you run into a problem. The revised document cannot be saved because you have run out of disk space on which to save it. You were also very bad because you forgot to save the spreadsheet, and now you cannot save it, either. Your dilemma is that you must shut down one or more programs to free up some disk space to save your data, but you cannot shut any of them down without losing some of your data.

The MINFREE parameter of the SWAPPATH statement specifies the amount of disk space which is to remain free to prevent the preceding scenario. When the swap file enlarges to the point at which further growth would cause less than 2 MB of disk space to remain, OS/2 begins to display messages to indicate that you have run out of swap file space or memory or both. If you choose to ignore these messages, you can still find yourself neck deep in the dilemma described above. Do not ignore them.

Trying out WinNT?

Those of you who know me fairly well—and perhaps some of you who do not—know that I am a die-hard OS/2 fan, beginning with Version 1.0 in 1987. I would like to share with you some of my recent experiences from that perspective.

Due to the official direction at my current place of employment, I have installed and started using Windows NT Workstation 4.0. Later this month, I will be taking an IBM class on the Netfinity 7000 server (we just purchased a new one) and part of the class is installation and configuration of Windows NT Server 4.0. Yes, I am learning about Windows NT. It is a very interesting experience.

Because I have two 5 GB hard drives for my ThinkPad 770, I decided to install it on that system. I can switch between operating systems in moments. The comparison is eye-opening.

My first impression of Windows NT Workstation is that it is easy to install, much easier than it was to install OS/2 on my ThinkPad. It

involved far fewer steps and contortions to get all the proper drivers and features installed.

I did have one problem during installation, however. Windows NT does not like to be installed on other than the first partition. It is supposed to install correctly on a second or third primary partition, but it kept crashing for me during the reboot after formatting the partition.

Many configuration changes are relatively easy to make once I find where to make them. Other changes cannot be made at all—at least until I get more training or figure out where to make them.

I am still getting used to the directory structure. It makes no sense to a Virgo who likes things organized. I try to install an application on the D: drive and parts of it insist on going into my Personal directory and the Applications directory on the C: drive.

My first problem after installation of the operating system was to instal Outlook '98 and Office '97. I made the mistake of installing Outlook first, and Office overwrote much of the Outlook code and configuration. Removing both and reversing the order of installation corrected that.

The thing that impresses me the most is the monolithic integration of Microsoft applications into the operating system. Once installed it is nearly impossible to determine the demarcation line between one application and another, or between an application and the operating system. This monolithic integration is, of course, Microsoft's weapon against other software vendors in the marketplace and the subject of the current antitrust lawsuit against Microsoft.

I use the term monolithic quite intentionally in this context. Arthur C Clark's monolith was of less ethereal nature and it provoked fear, uncertainty, doubt, and—most importantly—change.

Professor Twiddle's College

by John Urbaniak

Welcome to Professor Twiddle's College of Object Rexx Knowledge. I am Professor Twiddle, and I would like to teach you about Object Rexx.

Object Rexx is a treasure buried in OS/2 Warp.

It is a programming language, a batch-processing language, a scripting language, and so much more. Object Rexx runs under OS/2 Warp 3, OS/2 Warp 4, and yes, even Windows 95 and Windows NT. But we'll only discuss the OS/2 version here.

Rexx, now known as "Classic Rexx," was invented by IBM Fellow Mike Cowlishaw. His goal was to design "a language for people, not computers." Rexx has achieved "beloved" status by thousands of users, primarily because it is so *easy*; it's easy to learn, easy to use, easy to debug, and easy to maintain. You can find more information about the whole Rexx family at `www2.hursley.ibm.com` and learn all about Classic Rexx from *Teach Yourself Rexx in 21 Days*, by Schindler and Schindler (SAMS Publishing, ISBN 0-672-30529-1).

Object Rexx is an object-oriented evolution of Classic Rexx. It too, was designed "for people, not computers." Object Rexx uses the simplicity of Classic Rexx to make object-oriented programming easy for you. Besides, it can be fun, for novice programmers and experts.

I am not going to teach you theory about Object Rexx. Instead, I'll show you how it works, with little, easy examples.

A first Object Rexx program

In order to get started, follow these steps:

1. Switch your default Rexx to Object Rexx.

To do this, open an OS/2 command prompt and type `SWITCHRX`

A message will ask you to confirm. Please read the message. If Object Rexx is already your default, the message will tell you. In that case, you don't have to do anything.

2. Reboot.
3. Create a folder on your desktop called Twiddle.
4. Find the OS/2 System Editor icon (normally under Programs, Utilities), and create a shadow of the program object in the Twiddle folder.
5. Find the PMREXX.EXE icon (normally in your \OS2 folder) and create a shadow of it in your Twiddle folder.
6. To test your Object Rexx installation, use the OS/2 System Editor to type in the program above, exactly as shown. Make sure you include the comment on the first line.
7. Save this file as "Hello.Cmd" in your Twiddle folder as an OS/2 command file. Exit the editor.
8. You will see an icon **Hello .Cmd**, in the folder. Drag and drop this icon on the PMREXX.EXE icon you created in step 5. If your installation was correct, you should see the message:

```
Hello, object-oriented world!
```

If your installation was incorrect, you will get an error message.

9. Find the icon for the on-line "REXX Information" located in Desktop, Assistance Center, Information, Reference and Commands, REXX Information. Make a shadow of this documentation in your Twiddle folder.

Let's look at this short program one statement at a time.

```
/* Hello.Cmd—test Object Rexx installation */
hw = .string~NEW("Hello, object-oriented world!")
say hw
return
```

```
/* Hello.Cmd—test Object Rexx installation */
```

Every Object Rexx program requires a comment as the first line. A comment begins with `/*` and ends with `*/`. It's a good idea to specify the program name in this first line, along with some comment which describes what the program does.

```
hw = .string~NEW("Hello, object-oriented world!")
```

This statement creates an object, which we call **hw**. The object invokes the NEW Method of the built-in Object Rexx String class, and fills the object with the characters "Hello, ..."

The special character (~), called "Twiddle" after me, means "invoke the method" or "call the method." In this case, we call the method NEW, to create a new object. (We'll discuss classes and the NEW method in later sessions.)

```
say hw
```

This statement sends the contents of the object hw to the standard output file; in this case, that's the display window of PMREXX.EXE.

```
return
```

This statement is optional. It returns control.

Built-in classes

Object Rexx comes with a number of built-in classes. Many of these have powerful methods which you can use directly to manipulate your objects and data. Of course, you can add your own methods, or change the built-in methods to make the programs do what you want. This process is called sub-classing or extending, and we'll cover it in detail some other time.

I'll begin by illustrating one very useful built-in class, the Array class.

In programming, data is often stored in a sequential manner. That is, we have a series of data elements and we want to refer to the first one, the twenty-second one, or perhaps the last one. This kind of data is a natural application for the Array class. The following program shows some of the ways you can use the built-in Array class.

The Array class

Use the OS/2 System Editor to type in the program on the next page.

When you finish typing the program, save it as "Arrays.Cmd" in your Twiddle folder, and exit the Editor. Then drag the icon on the PMREXX.EXE icon to run the program. Examine the output and com-

pare it with your program statements to get a good understanding of the methods of the Array class. If you made some mistakes, fix them and try again.

Please note: the next-to-last statement of this program will generate an error message. This was intentional, to show you that you can not have a 0 element in an array (unlike C, which is hardly a "language for people"). It also shows you how error messages look in Object Rexx; they are designed to help you find and fix the problem fast.

Discussion of the Array class

As we said, the Array class is well suited to objects which have some kind of "sequentialness."

Did you notice that we did not have to pre-define how many elements are in the arrays? Object Rexx takes care of that for us. We can add additional elements to existing arrays.

Also, it does not care what types of objects we can store in an array. We can store characters, numbers, and even other objects like other arrays.

And we can do it so easily!

Professor Twiddle has been writing programs for quite a long time. He can honestly say that he has never seen or used a programming language that was as powerful and flexible as Object Rexx, yet was so very easy to use.

We intend to discuss more of the features of Object Rexx in future issues of *extended attributes*. In the meantime, we hope you take a few minutes to try this language for yourselves. We hope you enjoy this treasure which IBM buried for you in OS/2 Warp 4.

```
/* Arrays.CMD—shows how to use arrays */
/* Use the OF Method of the Array class to create an array */
Stooges = .array~OF('Moe','Larry','Curly')
/* Display the contents of the array using square brackets [ ] */
/* The ITEMS Method returns the number of elements in the array. */
say 'The Three Stooges are:'
do i = 1 to Stooges~ITEMS
    say i Stooges[i]
end
say
/* You can use square brackets to add or change a specific array element. */
Stooges[4] = 'Shemp'
say 'The Four Stooges are:'
do i = 1 to Stooges~ITEMS
    say i Stooges[i]
end
say
/* You can add an item to the end of an array. */
next = Stooges~ITEMS + 1
Stooges[next] = 'Curly Joe'
say 'The Five Stooges are:'
/* You can use do ... OVER as a shorthand. */
do Stooge OVER Stooges
    say Stooge
    if (Stooge = 'Curly') then say ' Moe, Larry, cheese!'
end
say
/* You do not have to have an item for each element of an
   array. If not defined, the element is The NIL object. */
StoogeSays = .array~OF("You knuckleheads, I'll murder you.", ,
    "Ow! Ow! Ow!", ,
    "Nyuk, nyuk, nyuk.", ,
    "Eep, eep.")
do i = 1 to Stooges~ITEMS
    say Stooges[i] 'says:' StoogeSays[i]
end
say
/* As in Classic Rexx, a comma continues to the next line. */
Hobbits = .array~OF('Bilbo','Frodo','Sam', ,
    'Merry','Pippin')
/* You can put numbers into an array. */
Fibonaccis = .array~OF(1,1)
/* You can put variables or expressions into arrays. */
do i = 3 to 10
    Fibonaccis[i] = Fibonaccis[i-1] + Fibonaccis[i-2]
end
/* An array may contain any Objects. In the following case, we make an array
of the arrays we have defined previously. Each element is itself an array. */
allMyArrays = .array~OF(Stooges,Hobbits,Fibonaccis)
say 'This is my array of arrays:'
do j = 1 to allMyArrays~ITEMS
    say
    myArray = allMyArrays[j]
    say myArray
    do arrayElement OVER myArray
        say arrayElement
    end
end
say
say 'You can not have a 0 element in an array.'
say 'The following statement will generate an error message.'
Hobbits[0] = 'Gerontius Took'
say Hobbits[0]
```

Give piece a chance

by Dick Krueger

Poughkeepsie, NY, April 1, 1999—In a surprise move today, IBM announced that, in an attempt to head off possible antitrust action by the Department of Justice, it will sell off its profitable PC division. At the same time, IBM will create a division to design and sell a new line of personal computers, preloaded with both Linux and OS/2 Warp.

Said an IBM spokesperson, "We will no longer be shills for Microsoft." Industry analysts were stunned. Barry Snide of The Gartner Group said, "This makes no sense. We predicted just last year that IBM would never again be subject to antitrust scrutiny. The company's actions over the last decade can leave no doubt about that. On the other hand, considering The Gartner Group's track record in predicting industry events, who knows?"

Update: In a retraction of an announcement made earlier today, IBM said that it would not be selling off its PC division, nor would it be offering OS/2 Warp to anyone who did not meet strict criteria for being a qualified customer of IBM. Said an IBM spokesperson, "The announcement earlier today was a terrible mistake. One of our senior teams of lawyers suffered a collective acid flashback and talked directly to the press. Normal procedure is for the lawyers to tell management what to say (and when and how to say it), but, in this instance, the usual checks and balances (as feeble as they are) didn't come into play."

Off the wall? You bet. But it may well take something almost as crazy to change IBM's OS/2 Warp business plan—assuming that anyone at IBM even knows what it is. It appears that there are several of them, depending on which manager at which division you talk to. Which business plan is the real one? Lou Gerstner isn't saying.

Piecing things together

So, what will happen with OS/2? Part of the answer is in what makes up OS/2 and part is in where the industry and IBM are going.

Unlike Windows, OS/2 is made up of several separate components.

The heart of the system is what runs when you boot from the installation or utility diskettes. That's the kernel. It's the part of OS/2 that's an operating system in the traditional sense. It contains the code that controls the system hardware and the applications that are running. It provides the standard application programming interface (API) so that programs can have access to the hardware and to system functions. The user interface is the OS/2 command line. And that's all there was in OS/2 1.0.

The second major component is Presentation Manager (PM). Introduced with OS/2 1.1, PM provides the API for the graphical user interface—the support for windowing operations. PM requires the OS/2 kernel.

The next major component appeared in OS/2 2.0. It's the Workplace Shell (WPS) that has endeared itself to so many of us. With support for folders, work areas, shadowing, drag-and-drop, and a host of other useful features, WPS breathed new life into the user interface. Microsoft is still dreaming about being able to do what WPS has been doing for years. The WPS requires Presentation Manager, although it could be ported to another environment such as Linux.

OS/2 2.0 also brought with it WinOS2, the subsystem that allows us to run Windows applications. WinOS2 requires Presentation Manager.

Since then, IBM has added multimedia, the Java virtual machine, and other subsystems that require either the core operating system, Presentation Manager, or WPS.

Three easy pieces

You can install OS/2 without some of the components listed above. Which ones do you consider essential? The kernel is probably all you need if you're building a dedicated device such as an ATM. If you're building a PC, on the other hand, you'll certainly want to include the Workplace Shell.

Speaking for myself, the part of OS/2 I'd give up last is the Workplace Shell. I'd be reasonably happy with the WPS running on top of a decent UNIX. In fact, I'd be reasonably happy most of the time with the WPS running on a network computer.

Given a suitable (read: robust) replacement, I'd hardly miss the OS/2 kernel. Ditto Presentation Manager. OS/2 multimedia support has a few nice features, but it's not a "must have" feature. And I can live without Windows support as long as I can find suitable Java-based applications. In my opinion, the one essential piece of OS/2, that has no peer, is the Workplace Shell. Please, IBM, don't let it die. And please keep it affordable for a humble home user like me.

NCs will make it

Speaking of network computers, I'm going to go out on the proverbial limb and say that it's the next big thing in networked computing. We're talking home users here, folks. It's a no-brainer to conclude that millions of 3270s in the corporate world will be replaced by NCs. But I think that many home computers will be replaced eventually with NCs.

The home PC market is pretty well saturated. The industry is hurting. Intel and Motorola have announced big layoffs. Microsoft is unsuccessfully trying to drum up enthusiasm for Windows 98. But penetration in the home market has remained at about 40% for at least a couple of years.

Part of the reason is price. Those who are willing to shell out upwards of $1,000 for another home appliance have already done so. A more important reason is complexity. If you're going to play games, why spend $1,000 for a PC when you can get a game box with better graphics for less than $300? Aside from games, what do most home users do with a PC? Surf the 'Net, send and

continued ➥

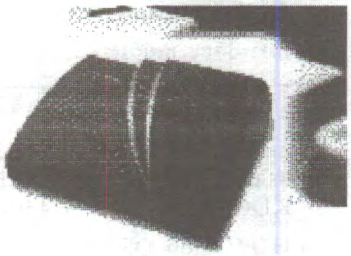
July meeting
Hard—where?

by Esther Schindler

We love hardware meetings.

Even for those of us who firmly believe that hardware was invented solely for the purpose of providing something for us to experiment with nifty software… hardware can be pretty compelling. I dare say that a high percentage of Phoenix OS/2 Society members are running a computer without a cover attached.

So we're especially glad that Brian Buckley, Outside Sales Representative from 3Com, will speak at the Phoenix OS/2 Society's next general meeting, on Tuesday, July 14 at 7:00pm.



His presentation will include an update on the exciting new U.S.Robotics 56K V.90 modems from 3Com. (All 56K products are capable of downloads up to 56Kbps; however, 3Com reminded me, due to FCC regulations which restrict power output, current download speeds are limited to 53 Kbps.)

Brian will also fill us in on the 3Com Bigpicture Video products, including the new Bigpicture TVPhone. You no longer need a PC to see your friends and family over a phone line.

We will also get a brief overview of the basics of networking. Did you ever wonder how your email system really works?

Plus, the extremely popular 3Com Palm III is hitting the street as we speak.

Be sure to attend to get the inside scoop on one of the hottest new products on the market today. Plus, there will be special prices on a selection of 3Com products, for members who attend the meeting.

For more information about 3Com products or 3Com user group programs around the country, visit the 3Com Web site at `www.3com.com/user_groups` or call 1-800-DIAL-USR.

General Meeting

what

▲3Com showing 56Kbps modems and more

where

▲Mountain Preserve Reception Center
1431 E Dunlap
Phoenix, Arizona

when

▲Tuesday, July 14, 1998
▲6:30pm: Q & A session
▲7:00pm: Regular meeting

.the president's corner (cont)

receive email, bank at home, make signs and greeting cards? Who in his right mind wants to deal with the complexities of Windows, registries, boot sequences, hard drives, device drivers, software upgrades, and Microsoft technical support?

One of the major ISPs is going to try a new business model very soon now. I don't know who, but someone will do it. The new model is big hardware server running OS/2 Warp Server (or something similar) that will support thin clients. At first those thin clients will be existing Windows PCs. Once the server is in place, though, it will open up a market for home-based NCs running Workspace on Demand (or something similar).

The ISP will do the worrying about Windows (and any other) software installation, software upgrades, data storage, backups, and, of course, Microsoft technical support. Need to do a spreadsheet? Want to play a game? Don't like the banking package you've been using? Look up the offerings from your ISP and choose what you like. Maybe you'll get a free trial period, then pay a onetime hookup fee or a monthly charge and the software is there for your use immediately and as long as you need it. Or maybe they'll offer collections of applications, something like satellite TV where you can choose from several different packages of movies and sports.

When the day comes that the average Joe or Jane can go to Sears or Penney's, buy an NC for roughly the cost of a TV set, take it home, plug it in, and start using it immediately—and be able to replace an old, broken one with a new one with no loss of service or data—then the home computer will have finally found its place.

I hope it's WSOD that becomes the standard. Then there's a fair chance I'll still be able to run a standalone PC with OS/2 and WPS.

Coming events

This is a list of events scheduled by the Phoenix OS/2 Society and other OS/2 user groups. Unless otherwise noted, active members may attend any scheduled event for free. (Other groups may have different attendance policies. Please check their Web sites for information about meeting schedules and attendance policies.)

Meeting notes

For the latest updates on the Society's event calendar, check the Web site at `http://www.possi.org`.

For meeting information and other queries, call the Phoenix OS/2 Society's voice mail at 602-949-4341.

If you have suggestions, ideas, or comments on the content of general meetings, contact the Society's Program Chair, Esther Schindler, at the general meetings or send email to `esther@bitranch.com`.

July

S	M	T	W	T	F	S
			1	2	3	4
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November

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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July 1998

5 Magazine submission deadline for August issue. Articles should be sent to `editor@possi.org`. For other arrangements, call 602-585-5852.

7 net.sig (Internet SIG). Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

7 HOW (How OS/2 Works) GIG. Meeting is 6:00pm to 8:00pm. Coordinator Lyle Wilson. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

14 General meeting; 3Com, showing 56Kbps modems and more. Meeting is 7:00pm to 9:00pm. Q&A session is 6:30pm to 7:00pm. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

25 Board meeting and magazine prep. Meeting is 10:00am to 1:00pm. Eat a brunch, learn about the inner workings of the Society, and help get *extended attributes* ready to mail. Location: Bill and Esther Schindler's house in north Scottsdale, 9355 E Mark Lane. Call 585-5852 or send email to `esther@bitranch.com` for directions. Remember to bring a potluck dish to share, too.

August 1998

4 net.sig (Internet SIG). Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

4 HOW (How OS/2 Works) GIG. Meeting is 6:00pm to 8:00pm. Coordinator Lyle Wilson. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

5 Magazine submission deadline for September issue. Articles should be sent to `editor@possi.org`. For other arrangements, call 602-585-5852.

15 FOOBAR (Friends of OS/2 Barbeque And Revelry). Send email to `president@possi.org` for directions, time, and guidance about food to bring. Location: Dick Krueger's house.

22 Board meeting and magazine prep.

September 1998

1 net.sig (Internet SIG). Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

1 HOW (How OS/2 Works) GIG. Meeting is 6:00pm to 8:00pm. Coordinator Lyle Wilson. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

5 Magazine submission deadline for October issue. Articles should be sent to `editor@possi.org`. For other arrangements, call 602-585-5852.

8 General meeting; Stardock (tentative) showing Object Desktop 2.0. Meeting is 7:00pm to 9:00pm. Q&A session is 6:30pm to 7:00pm. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

26 Board meeting and magazine prep.

October 1998

6 net.sig (Internet SIG). Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

6 HOW (How OS/2 Works) GIG. Meeting is 6:00pm to 8:00pm. Coordinator Lyle Wilson. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

5 Magazine submission deadline for November issue. Articles should be sent to `editor@possi.org`. For other arrangements, call 602-585-5852.

13 General meeting; The Graham Utilities. Meeting is 7:00pm to 9:00pm. Q&A session is 6:30pm to 7:00pm. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

16 Warpstock '98. October 16–18 in Chicago. See the Warpstock Web site at `www.warpstock.org` for more information.

26 Board meeting and magazine prep.

November 1998

3 net.sig (Internet SIG). Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

3 HOW (How OS/2 Works) GIG. Meeting is 6:00pm to 8:00pm. Coordinator Lyle Wilson. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

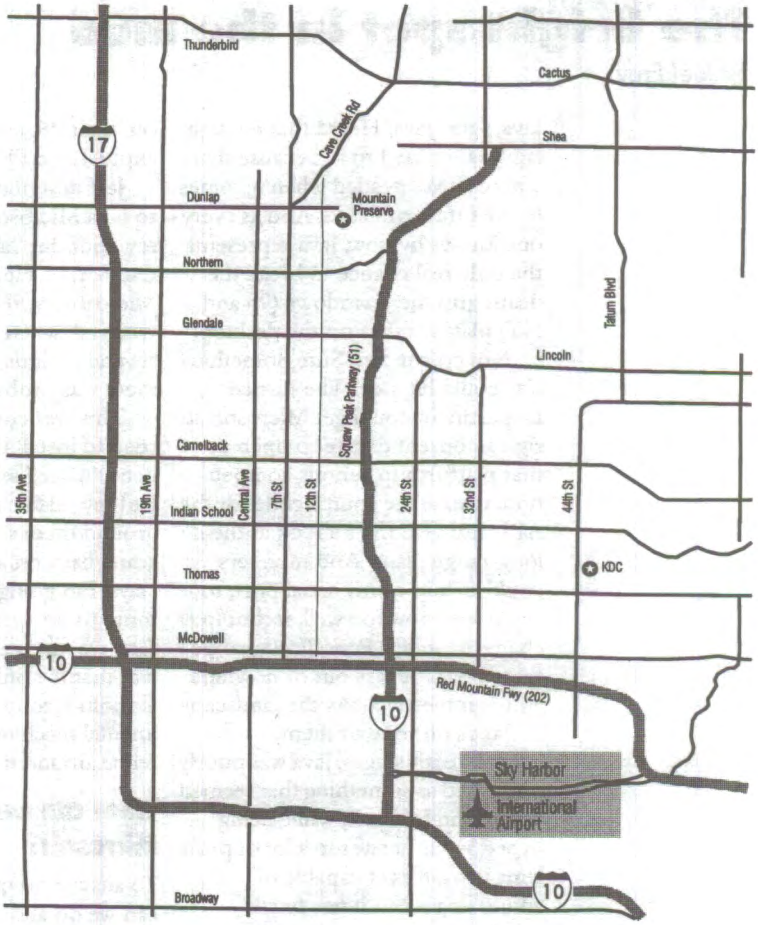
5 Magazine submission deadline for December issue. Articles should be sent to `editor@possi.org`. For other arrangements, call 602-585-5852.

Meeting locations

General meetings are held at the Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

From the Black Canyon, exit at Dunlap and head east. From the Squaw Peak, exit at Northern. Go west to 12th Street, turn right and go north to Dunlap, turn right, and it's two blocks up on the right.

The "How OS/2 Works General Interest Group" and the Internet SIG (net.sig) meet at Knowledge Development Center, 2999 N 44th St, Suite 400. That's just north of Thomas, in the building with the green dome. Plenty of free parking space is available in the garage behind the building.



If the mailing label on the back cover says "sample," then this may be the only copy of *extended attributes* that you will ever receive. If you want to keep getting the magazine (and receive all the other benefits of membership), you must join! A 12 month membership in the US is only $30. (See the form for membership pricing in other areas.) Tear out the application form, fill it in, and mail it with the membership fee to the Society's address.

.sias SIG news

net.sig

by Mike Briggs

After about two years of wanting a cable modem, I should get mine installed on June 10. At the next net.sig meeting, I'll relate my experience with the installation and what it takes to get OS/2 set up to use the modem.

Cox Cable here in Phoenix will now install cable modems into apartments in serviced areas if there are fewer than 200 units. Cox is also planning to offer phone service through the same cable. Things are looking up here for fast permanent Internet access.

See you next month.

POSSI Web site make-over

The *extended attributes* area of the Phoenix OS/2 Society's Web site is getting a complete face lift.

Several areas on the Web site are being addressed. First and foremost, the layout has been cleaned up. Also, additional information has been added, including a link to the secure membership sign-up site at BMT Micro.

One of the largest new additions to the site is the back issues area for *extended attributes*. The back issues page features thumb nail images of each cover, and a summary of the contents of that issue. Eventually, the table of contents for all of the back issues will be available on-line.

Also, select articles from each back issue are being put on-line. Articles are linked from the table of contents page so that you can quickly see what's available.

You can check it out at `www.possi.org` or go directly to `www.possi.org/ea.htm`

lastmonth

The bright spot in the mud

by Joel Frey

Java, Java, Java. Heard that enough lately? Get used to it, because that's where IBM's headed when it comes to the future of OS/2. And as everyone knows by now, Java represents the only real chance to break the death grip the Twindows (95 and NT) platform has on the desktop.

Not convinced? Sure, something else could happen. The Justice Department could get Microsoft to sign a consent decree to open up that platform to serious competition, release the source code for the API, and give ISVs a look at their long-range plans. And monkeys could fly out of my serial port, too.

As we know too well, technology changes rapidly. Periodically, something new appears out of nowhere and completely alters the landscape.

Java's not one of them.

In its early stages, Java was poorly promoted as something that seemed tied to the Internet, while being hyped as the answer to a lot of problems it wasn't yet capable of addressing—but it has finally acquired amazing momentum.

Bald soothsaying

At our May general meeting, Jeff Duntemann, Editor In Chief at *Visual Developer* magazine, and editorial head for The Coriolis Group, set the record straight about what Java is and is not. He spoke to us about its past, present, and future.

Jeff had a number of interesting things to say. His background is a mixture of mainframe programming (APL under TSO, for all you big-iron types), and more recently, publishing books and magazines about the IBM PC.

Among other things, Jeff spoke about his love-hate relationship with IBM. When he started *PC Techniques* magazine in 1989, he intended to cover OS/2. He called IBM to make his presence known to the PR group handling OS/2, but was shuffled around until he ended up talking to one of the last people still working on OS/360 stuff. As he pointed out, at least they got him to someone that dealt with an OS.

As Jeff later discovered to his dismay, he ceases to hear from IBM every two years. Because IBM farms out their PR, every time the contract expired, the PR database was lost.

Jeff described how he had come to be a Microsoft skeptic in the last few months, "along with most of the world." He saved the anti-Microsoft mail his magazine received; when it started exceeding several pounds, he began to realize there was probably something to it.

This was confirmed when he tried to install the 98 Explorer 4.0 beta. "After I reinstalled NT 4.0 and had my teeth capped because I ground them so much, I put Netscape back on and that's where it stays. I'm going to have nothing more to do with Windows 98. In fact, we made a decision the other day, that the only copy of 98 for the Coriolis Group will be on our experimental machine with a barbed wire fence around it."

What can we do about Microsoft?

To answer his own question, "What can we do about Microsoft?" Jeff said, "They'll always be with us, just like the national debt."

"The more successful Microsoft gets, the less we need them." He said that was a hard position to defend, but he didn't elaborate.

"Throw a flower on Apple's grave; those guys are not the answer." Jeff explained that he came to this conclusion after reading former Apple CEO Gil Amelio's book, and hearing him speak.

"Support the hell out of Java. Truth be told, you only have one option and you might as well take it, because I don't see anything even reasonably close coming over the horizon any time soon."

When someone asked, "Isn't Java going to get corrupted, just like Cobol?" he said, "Only one guy is trying to corrupt it. Unfortunately, it's the wrong guy."

"Sun has really done a wretched, miserable job of telling the world what Java is and what it's about... I've been trying to tell people what Java really is." He presented a little true-false quiz about Java.

- ❍ Java is a programming language.
- ❍ Java is inextricably about the Internet.
- ❍ Java has no file I/O. (He hears this more than anything else.)
- ❍ Java programs are very slow.

"False. False. False. False. Java is really a virtual assembly language. The source code is compiled into binary files that are fundamentally similar to Intel opcodes (machine instructions) and executed by a program called a Java Virtual Machine (JVM). There is now a JVM for every OS of any consequence... one the point commonly missed is that there is no connection between the JVM and any particular programming language. None whatever."

"Most people think that Java is tied inseverably to the Internet. Not true. Java supports a number of different operating modes; the one people see most often is the Java applet which runs under control and supervision of a browser. [Applets] are inherently small because they need to be downloaded... in all other cases, a Java application can be deployed on any machine that has a JVM."

"Why do people think that Java has no file I/O? What Java has that is absolutely brilliant is a security manager which is part of the JVM. The security manager allows you the most exquisite degree of control over file I/O of any system. The machinery that is present in the security manager allows you to write audit trails and all sorts of cool things; you would spend months duplicating its functionality in open code." He continued, "Java does everything under the control of a security manager which defaults to no file I/O, and no uploading in Java applets" for security reasons.

But isn't Java slow?

People think that Java is inherently slow because of the time it takes to download an applet from the Internet when viewing a Web page, but the additional execution overhead is not usually discernible. As Jeff pointed out, "Try downloading NT 4.0 upgrade sometime." He also noted that performance is dependent on the quality of the JVM which can vary widely, and was particularly poor on some of the early ones. He said that one reason that

Corel's Java suite was so slow was that they tried to do it before the standards and the JVMs were mature enough. Java might be slow because it runs in an interpretive mode; he pointed out that, with the current generation of processors at 200 MHz and up, processor speed is no longer the bottleneck it once was.

In terms of the "write once, deploy anywhere" aspect of Java, Jeff said that most of the prior problems were due to bugs in early versions of the JVMs. "Sun has never wanted to admit that early JVMs were purely pieces of junk; early releases of anything are buggy," and the lack of backward compatibility with early versions of the bytecode and later JVM standards.

On the subject of software distribution, Jeff mentioned that Install Shield, which owns the major chunk of that market, now makes Java deployment tools that check that you have the right version of the JVM on your system. They upgrade it if necessary before installing an application. He talked about standard CDs being a universal medium that works on any platform and provides a great vehicle for Java software distribution. "You have the opportunity to take a Java application that's been burned onto a CD, load the CD on any hardware and execute that application. The floppy format is operating system dependent." (Not to mention, often too small.)

According to Jeff, Java Integrated Development Environments (IDEs) are improving rapidly, and many ISVs are looking at them as their last big chance to get a piece of the developer's market. "Essential APIs are in place and rapidly improving. JDBC is remarkably good for as young as it is. And JavaBeans, the youngest of all of them, is coming along. I'm very much a software components guy and I predicted a few years ago that Java would not come into its own until it had a robust interface and a strong component standard. I'm beginning to believe that Sun is finally coming around to the idea of strong component standards."

User interface issues

On the issue of the user interface when using Java, Jeff said, "There is no fundamental reason for Java to usurp the underlying interface."

However, when asked how you deal with the differences in the UIs when using an app, he said, "That's a gnarly question for which there is no real answer. There's the least common denominator school of thought, and there's the 'expand the AWT until it encompasses all' school of thought. I like simple business apps, I don't love fancy stuff, and maybe it's possible to have an app that looks largely the same." Later, he mentioned that if you build it in to the AWT, that functionality is available on all platforms.

Of course, this is *the* issue for OS/2 users because (and I'm being totally objective here) of the fundamental inferiority of the Windows UI, and the likelihood that it will become the standard. The underlying current in the Java initiative is getting away from the Wintel domination of the market; Sun and its partners should realize that the best way to do that is to provide something superior. A satisfied Windows consumer has no real motivation to use Java apps except for availability, unless those apps are superior in cost or functionality, and still have a familiar feel.

Jeff commented that "theoretically, I've heard people say it is possible to create an app that would create a sort of a virtual UI layer over Windows [or] over Warp, but why bother?" Perhaps because the ability to select and tailor a desktop/UI model would be one way of getting the level of integration between the UI and the application that the world has become accustomed to, even if they select the 95/98/NT model (or even Windows 3.1 for that matter). In Jeff's words, "The immense intellectual investment in simple day-to-day UI expertise is something that people do not give up easily." I would add that people are also highly resistant to any change that doesn't provide substantial benefit. Unless Java apps are superior, ISVs may forego the expense of redeveloping their products in Java if their cusomer base doesn't demand it. It also provides for broader choice when selecting a hardware platform if you know that you can get the UI that's familiar to you, or even to get the UI you prefer on the hardware you have.

So, what are the programming limitations with Java? "You're probably not going to be running Quake over the Internet" any time soon. But most of any application "is created out of whole cloth in C. And anything you can do in C, you can do in Java. In fact, you don't have to do it in Java." As Jeff said, "The Java language has gotten in a lot of peoples' way. They took a reliable Pascal chassis and put C sheet metal on it." NetREXX is another example of compiling source from another language into Java bytecode. (I've played around with Java a little bit, and from a programming standpoint, I would take it over C++ in a heartbeat if it could actually be used for all the things C++ can, but it's not there yet. But then my C++ experience has been primarily maintaining a 16-bit Windows app. Segmented memory architecture is clearly the work of the Devil.)

The big mystery is graphics; since it is one of the most machine-intensive functions and requires specialized processing to be quick enough anyway, does that mean that the trade-off will be losing the device independence that Java should provide in exchange for speed? Or is that extra layer of translation no big deal in the overall process? Maybe graphics intensive apps will remain the domain a platform-native programming for the foreseeable future.

As Jeff pointed out, "Maybe you can contest me on this, but the bright spot in all this mud is that I don't see anything that Microsoft can do to derail Java." Or Intel. Most of us remember OS/2 for the PowerPC, that died before its production release. We know that NT is available for the DEC Alpha chip. Unix runs on multiple hardware platforms. Trying to market new platforms is a pretty dicey proposition in view of the OS and application dependence on processor architecture. If Java lives up to its potential, there may also be some relief from the Wintel dominance of the hardware world. The history of computers has been writing software to a hardware standard in the interest of performance, although usually at the compiler level. It's possible that hardware architects of the future may find themselves designing to a virtual machine standard.

review

The light at the end of the Tunnel/2

by John Sandercock

Tunnel/2 is the latest offering from F/X Communications, the people who brought us the InJoy dialer. Like InJoy, Tunnel/2 is shareware which can be downloaded from the vendor's Web site (`www.fx.dk`), BMT Micro, or Mensys. The latest version, 1.20, was released on April 1, 1998.

Tunnel/2 is three programs: the Tunnel Master, the Tunnel Slave, and a command line utility, which make it possible to set up a virtual private network (VPN) on the Internet. If VPNs are an unfamiliar concept, think of them as secure dialup access to your office LAN via the Internet. The documentation available at the vendor's Web site will give you a solid grounding in the subject.

Easier than it appears

Unfortunately, that extensive documentation creates the impression that installing Tunnel/2 is an ambitious undertaking. It's really quite simple, and it works "right out of the box" with the default settings.

To install Tunnel/2, unzip TNL120.zip using the "directories" parameter to preserve the directory structure. The unzipped files and directories will only take up only a few MB of your hard drive, so you can keep the structure intact on each machine, even though you will probably use only the Tunnel Master or the Tunnel Slave on any one computer. A REXX installation program places a folder on your desktop.

Install the Tunnel Master on a machine with a fixed IP address (on your LAN, if you have one). Make sure that TCP/IP port 1111 on this machine is accessible via the Internet. Create a password file, name it PASSWORD.TXT and save it to the MASTER directory. A sample password file can be found in the SAMPLES subdirectory. Start the Tunnel Master with the default values by running TM.EXE or double-clicking the Tunnel Master icon. You will see "TUNNEL READY" in the output window if everything is in order.

Install the Tunnel Slave on a machine which has dialup access to the Internet. I tested Tunnel/2 with InJoy, but it should work with any Internet dialer. If you use InJoy, installing the Tunnel Slave in the InJoy directory will enable the Tunnel Slave to grab some connection information from InJoy.

You must start InJoy with the /D parameter to keep it from creating a default route. You must then also make sure that your route table contains a host route from the Tunnel Master to your nameserver and from the Tunnel Master to your ISP gateway. InJoy displays the address of the current gateway in a box in the center of the screen.

Once you have dialled up the Internet, start the Tunnel Slave as follows:

```
TS.EXE /M:<IP address of Tunnel Master> /S:password
/G:<ISP gateway address> /F
```

Only the master and password parameters are required. The Tunnel Slave can grab the gateway address from InJoy. You can also type these parameters into the Properties Notebook of the Tunnel Slave icon and start the program by double-clicking the icon. The Tunnel Slave will advise you "Tunnel connected" when it is.

By default, the Tunnel Master creates a LAN with a virtual IP address of 10.2.1.1 and a subnet mask of 255.255.0.0. The Tunnel Slave gets 10.2.2.1 by default. If you need additional addresses, you have to configure them. You can test your tunnel by pinging the master at its virtual address from the slave and vice versa. You should also be able to telnet from one to the other.

What's it good for?

Members of the Phoenix OS/2 Society can undoubtedly imagine myriad uses for Tunnel/2. I wanted to feel more secure while using HyperAccess Pro to connect to my office desktop and our Netware file server over the Internet.

Other remote access solutions, such as the intriguing Java applet included in PM2You (which was mentioned in a recent issue of *extended attributes*), probably work equally well with Tunnel/2,—just not on my AMBRA notebook with its maximum 12 megs of RAM.

I am also aware that I have just scratched the surface of this powerful tool. F/X Communications estimates that a single Tunnel Master can handle more than 160 active Tunnel Slaves. The security it provides can be enhanced with plugins.

One of the best features of Tunnel/2 is that it uses very few system resources. F/X Communications claims that the program will run under OS/2 2.1 on a 386SX with 4 megs of RAM. I can't vouch for that, but I know it runs under OS/2 Warp 3 on a 486DX with 12 megs of RAM. Like InJoy, it runs in an OS/2 text window. There isn't much you can do to it with a mouse, and it doesn't have the polished look and feel of products like MR/2 ICE—but then, it was designed to run in the background.

I can't compare this product to others, because it is probably unique in the OS/2 market. I can say that it works, it is reasonably priced for small installations ($45 for a personal edition and $199 for a 5-user license), and that the support provided by the author is excellent. I would like to thank Bjarne Jensen, `bj@fx.dk`, President of F/X Communications, for his help in setting up my tunnel and wish him every success in the future.

The trouble with old 16-bit code!

by John Wubbel

Companies usually suffer losses, far greater than they realize, by not addressing and correcting defects as soon as possible. What can be really nasty is a program in wide use that's no longer supported or maintained by the original publisher. The older code gets, the less likely it is to run flawlessly, especially as operating systems are upgraded.

The Microsoft program known as PM Word for OS/2 (PMWORD) was just such a case. As you know, Microsoft dropped development and support for this program when they discontinued their joint development efforts with IBM on OS/2. Unfortunately, many people continued to use MS Word, even on OS/2 Version 3.0—where I found myself debugging the problem for a customer.

The problem first surfaced back in OS/2 2.0 + SP 6055 days when, apparently, improvements were made to the graphic engine's (PMGRE) memory management. At periodic intervals, this problem was reported by customers. We would get memory dumps for analysis, but we could never get enough information from the dump to see what was going on. Of course, the companies reporting the failing system reported the failures as operating system defects. Therefore, the operating system needed to be debugged and fixed.

The page fault was somewhat random in the early stages of trying to get a step by step re-creation scenario. Every time we got a report on the problem, it was any type of fault, such as a problem with the fonts (or even bitmap operations) either to the screen or during the time a print job was being sent to the printer. These failures were intermittent and did not consistently fail in the same place every time.

We put in many hours of debugging, using several theories that we tried to prove or disprove. Basically, on a live system (i.e. remote debug session), we would find ourselves stopped on a page fault. The circumstance we found ourselves in when stopped on the page fault was that it was already too late, so to speak. For example, the PMDF memory dump would show the following:

```
ln
005a:17a252f0 pmgre:CODE32:FM_CreateCache + 266
005a:17a25794 CharStringPos32 - 23e
##r
Trap 14 (0EH) - Page Fault 0002, Not Present, Write Access,
Supervisor
eax=00000000 ebx=00010000 ecx=00003c00 edx=17a74ac0
esi=00c83d40
edi=11dc1000
eip=17a25556 esp=00c83a80 ebp=00c83b0c iopl=2 rf -- -- nv up
ei pl nz ac
pe nc
cs=005a ss=004a ds=0053 es=0053 fs=150b gs=adbf  cr2=11dc1000
cr3=001b2000
005a:17a25556 f3ab            repe stosd
es:11dc1000=invalid
```

The failure actually occurred much earlier. I witnessed this, because I identified an API in PMGRE that was returning an error code. After that, the system would run for a short time, then fault as a result of the previous event.

As we embarked on debugging this, we realized the memory belonged to PMGRE, but we couldn't understand why we got the page fault. We decided to determine the size or limit. We used the following method:

Lets look at pActiveList because the memory the memset function is using came from a previous SSAllocMem call.

```
##dd pActiveList
%17a74498 17a75258 00000006 00000000 …
```

We are interested in the first four double words:

```
##dd %17a75258
%17a75258 17a75368 11dc0000 00010000
00000009
```

- 1st dword = ->pNext
- 2nd dword = Memory object
- 3rd dword = size according to PMGRE (64K)
- 4th dword = flags

Take 11dc, multiply by 8 and add 7:

```
##dl %00008ee7
8ee7 Data Bas=11dc0000 Lim=00000221 …
```

The limit is 0x221, but PMGRE thinks it is 64K in the third dword.

At this point, our theory was someone (*not* PMGRE) was resizing this memory object. In all likelihood, it would be an old 16-bit piece of code. Giving PMWORD the benefit of the doubt, we set out to look at 16-bit code that is still used in OS/2. PMPRE.DLL was a good candidate. However, in the case of the customer reporting the problem, the fault only occurred when using PMWORD. So, we could not rule PMWORD out of the picture, but we could prove the problem wasn't in OS/2. If PMPRE was the culprit, we would be able to make the fix easily, because at this time PMPRE was still 16-bit.

PMGRE maintains its own pool of memory. Its memory management unit is very efficient—it was designed with strict rules for use of that memory when given to a user, and restrictive in terms of things the user should not do when using that memory. Sooner or later, the memory is given back to PMGRE and the SSFreeMem function is an area of code we monitored. Once the memory is given back to PMGRE, it is placed back into the idle list for someone else to use later on.

In the SSFreeMem function, we make two calls to Dos32SetMem(). The first call de-commits the memory while the second one, immediately following, commits it. The code in PMGRE does not check return codes on those two calls. Therefore, in order to check the return code, I built a private PMGRE.DLL with an INT3 (debug interrupt) right after the API returned. The purpose was to identify who was giving us the memory back. The APIs were returning with an error 0x57; the operations those two Dos32SetMem calls were suppose to do were never completed successfully. This was the beginning point that eventually led to a failure in the system.

In every case, we found the user of that memory object was PMWORD. We also found that the selector was the same one that showed up in the trap that occurred later on in the session; the limit was also the same size at that point, which indicated PMWORD resized the memory object. At one point we debugged PMWORD code with no symbols or source and watched it realloc the memory object. Usually at this point, the stack was very small and easy to trace back into PMWORD.DLL. We found no evidence of any OS/2 16 bit code resizing the objects.

You might ask why return codes on Dos32SetMem are not checked. Many return codes are checked throughout PMGRE. When it finds a bad code it simply logs it and continues executing. PMGRE uses the calls provided by the kernel in the Memory Suballocation Package (MSP). The MSP provides its own set of rules everyone has to live by, including PMGRE. In essence, this is where the 0x57 is returned from, not PMGRE. However, in PMGRE it is assumed that everyone follows the rules and, if they do, it should not fail on that call.

In this case, PMWORD did not follow the rules. If PMWORD had set the size of the memory object back to the original size, it might sneakily have gotten away with violating the rules. The memory provided by the PMGRE is only available to ring 2 processes. Somehow PMWORD gets access through its DLL. Anyway, on with the story.

Continuing to debug, we watched this selector to see what happens to it in subsequent execution. Lo and behold, PMWORD uses it again with the smaller limit (which by the way is not always 0x221 necessarily) and we would soon encounter the page fault. The example code and stack unwind would look something like the listing on the right after the page fault in the case of FM_Createcache.

From within, PMWORD calls GpiCharStringAtPos at 93ff:b299

I hope you can follow through what is happening here. If the object was not de-committed and then committed, we are essentially moving it from the active list to the idle list.

Remember, even though PMGRE thinks the size is 64K, we probably only gave a 4K page from which PMWORD sized down. The 4K page resides in the 64K block. A little later, PMWORD comes back and asks for more memory—we might allocate new memory, but more than likely we give it from our idle list and now PMWORD gets the selector back with a bogus limit. It is hard to predict when that will happen. But just imagine you are running for a couple of hours and you never get that selector back, but you might be filling the idle list with a bunch of selectors with foul limits.

Once the problem is understood, what can you do about it, and how can you solve the customers problem? The real problem here is PMWORD, a very old application that has not had any code upkeep in years. If a company is going to use an application over a long time, any good IS shop will tell you that you need a method in place to do maintenance work on the code over its useful lifetime.

This type of problem is probably very prevalent throughout PMWORD code. It appeared that OS/2 strayed off the course of compatibility; actually, that was not the case. OS/2 had vastly improved in performance and quality. But, old code needs continued care if it is used in production.

You might wonder why something cannot be done in PMGRE or the kernel perhaps, to give the customer a work around. That topic was given long hard consideration by IBM development and all possibilities were discussed.

First of all, there were several possible theoretical means of coding around the problem. None were appealing. The problem cannot be fixed by a single line of code. If this were possible, the Change Team would have done it. It would involve a design change requiring code to be added which results in forcing an entire system retest on the whole operating system to make sure the new design does not regress the system. The technical issues such as performance, memory fragmentation, etc. are to much of an impact, particularly when such a change is going against the rules that were built into PMGRE early in its original design phase. The risk is very high for a customer to assume, particularly if you plan to keep that customer in the future. PMGRE is complex, which makes our ability to predict its behavior with a certain level of confidence, very difficult. Correcting the problem would not be feasible, nor make much economic sense.

```
005a:17a26df6 17a7652c 00000001 17a764fc
00000033 FM_GetCache + 1e6
005a:17a1b8b7 00c83c94 16aebac0 00000000
0000001f GenCharString + 85f
005a:17a25a47 16aebac0 00c5819c 00c58162
0000003b CharStringPos32 + 2b3
005a:14d6b959 010000b4 00c5819c 00c58162
0000003b eddt_CharStringPos + 1a5
005a:179faf3d 010000b4 00c5819c 00c58162
0000003b Gre32CallForwardR2 + 6d
005a:1a7c19ed 010000b4 00c5819c 00c58162
0000003b FullCharStringPosAt + 99
005a:1a7a16ca 01395a50 00c5819c 00c58162
0000003b T_GPI_LPPLLPP + 42
005a:93ef062f 93ffb277 93f70024 062f169e
00000001
##dw 93ff:b277 18
93ff:0000b277 4689 f6d2 9e84 0100 3f74 7e83
00d0 1a75
##u 93ff:b277
93ff:0000b277 8946d2 mov word ptr [bp-2e],ax
93ff:0000b27a f6849e0001 test byte ptr
[si+009e],01
93ff:0000b27f 743f jz b2c0
93ff:0000b281 837ed000 cmp word ptr [bp-
30],+00
93ff:0000b285 751a jnz b2a1
93ff:0000b287 ff761a push word ptr [bp+1a]
93ff:0000b28a ff760e push word ptr [bp+0e]
93ff:0000b28d ff760c push word ptr [bp+0c]
93ff:0000b290 ff760a push word ptr [bp+0a]
93ff:0000b293 ff7608 push word ptr [bp+08]
93ff:0000b296 ff7606 push word ptr [bp+06]
93ff:0000b299 9a4a0537cb call cb37:054a
```

Finally, requests from customers came in all the time, whereby their applications fail and they expected IBM to fix the operating system. If such a thing were done, you would probably break all your other customers just to save one.

What can one possibly do when you find yourself in this 16-bit code situation? I think you have to be up front with the customer and be absolutely firm. You have to get innovative and figure out what productivity the customer loses if they cannot utilize the code in question. Maybe it is a matter of just retraining too many people on a new word processor. Even that is hard to jus-

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.info

An HTML primer

by Richard Klemmer, richard@webtrek.com

Richard R. Klemmer has been an OS/2 user since January of 1995. He is a computer programmer for the Department of Agriculture during the day, and a partner with WebTrek L.L.C., a Internet Consultant and Web provider, during the rest of his waking moments, and some of his sleeping ones.

The HyperText Markup Language (HTML) is the language used to create documents on the World Wide Web. It is based on the Standard Generalized Markup Language (SGML), and was designed to be nonproprietary and cross platform.

HTML documents can be created using a plain text editor—such as the OS/2 Enhanced Editor, a special editor designed for assisting in the creation of HTML documents, or a WYSIWYG (What You See Is What You Get) editor that lets you visually design the document without having to know HTML.

However, even if you use a WYSIWYG editor, it is good to have some basic knowledge of HTML. Additionally, if you truly wish to control the presentation of you documents, it is best to have the ability to edit the HTML manually.

The basics of HTML.

Since HTML is a markup language, it is created by using special tags around portions of your document to indicate different effects that the Web browser viewing the page will render.

An HTML document is made up of three parts. The first is a line containing the version information. The second is the header section. The third, and probably the most important, is the body of the document.

```
<UL>
<LI>Cyrix 6x86 150
<LI>2.7GB HD
<LI>64MB RAM
<LI>36.6 kpbs Inernal
Modem
<LI>2MB SVGA Card
<LI>OS/2 Warp version
4
</UL>
```

Example 1

The version information specifies what version of HTML the document uses, and contains the Document Type Declaration. It is often left off of HTML documents, but it is a requirement of the HTML standards as defined by the World Wide Web Consortium (W3C).

A valid DTD would look like this:

```
<!DOCTYPE HTML PUBLIC
"-//W3C//DTD HTML 4.0 Transi-
tional//EN" "http://www.w3
.org/TR/RED-html40/loose
.dtd">
```

For additional information on Document Types, I recommend visiting the W3C web site at `www.w3.org`.

The rest of the document is contained within the HTML element. This is defined by the `<HTML>` and `</HTML>` tags. The header and body information must exist within these tags. The `<HTML>` tags are optional since browsers will probably be able to read your document without them, but it is good practice to include them anyway.

The second part of the document, the header, is contained within the `<HEAD>` and `</HEAD>` tags. Again, these tags are optional, but should be included.

Within the HEAD element are the TITLE element and META data. The TITLE element is defined by the `<TITLE>` and `</TITLE>` tags. The TITLE should describe what your page is about, and is used by bookmarks to refer to that page. It is also put in the browser window's title bar. The title of the page should not be too long, but should also be descriptive of the page so that someone coming to that page from another Web site won't be confused.

Never assume that people will view your pages in the order that you wish. Keep this in mind when creating your Web site.

The META data is used to indicate information about the HTML. One use of the META tag is to specify keywords to be used by search engines. For example:

```
<META name="keywords" con-
tent="possi, OS/2, html,
extended attributes">
```

The rest of the HTML document is contained within the BODY element. This includes all text, images, links and any other information or tags that the page uses. This portion of the document is contained within the `<BODY>` and `</BODY>` tags.

Headings

The heading element describes, divides, and portions the document. There are six levels defined by the tags `<H1>` `</H1>`, the largest or most important, to `<H6>` `</H6>`. These tags can be used to structure your document in a way that makes it more readable to viewers.

Paragraphs and line breaks

The paragraph tag separates the text or objects on your document by a blank line. Paragraphs are defined by the `<P>` tag. The paragraph ending tag `</P>` is optional. Originally, most paragraph tags were placed at the end of paragraphs to create a blank line following the text. However, more recent specifications recommend putting the `<P>` tag at the beginning of each paragraph.

You use the line break tag `<BR>` to add what amounts to a carriage return on your document. This tag breaks the line, but it doesn't add an empty line between the data on either side of the tag.

Emphasis and Strong

The `<EM>` `</EM>` and `<STRONG>` `</STRONG>` tags indicate portions of your text you wish to emphasize and strongly emphasize respectively. Generally the browsers render these tags as italics for `<EM>` and bold, or darker text, for `<STRONG>`.

These tags are termed "logical styles," since they tell the browser how the text is to be used, but not exactly how it is to be formatted. I prefer these tags to the bold `<B>` and italic `<I>` physical styles.

Links

One of the best things about HTML and the Web is the ability to connect documents through hypertext links. Links can be used to point users to other documents on the Web, whether they are on your site, or somewhere across the world.

Links are defined by the `<A>` tag and contain additional attributes including NAME, HREF, and TITLE. There are many different ways to link documents on the Web. Here are some of the different types of links available:

- Local documents contained within the same path.

```
<A HREF="html_article.html">
Links</A>
```

This example creates a hyper link to a document with the filename "links.html," contained in the same directory on the server as the current page. The viewer of the docu-

ment will only see the word "Links" highlighted by the browser either as a different color and/or underlined.

- Local documents contained in a different directory.

```
<A HREF="../docs/draft.html">
First Draft of Article</A>
```

The path points to the document based on its location relative to the path of the current document. The path can also an absolute path. For example, if the current document is "index.html" and is in the directory "/mysite/docs/", and you wish to point to the above document, you would use the link element:

```
<A HREF="/mysite/docs/
draft.html"> First Draft of
Article</A>
```

- Documents on other Web sites.

```
<A HREF="http://www.webtrek
.com/index.html"> WebTrek
L.L.C.</A>
```

Linking to documents located on other Web sites is similar to linking to local documents. Instead of supplying a directory path, you just supply the Uniform Resource Locator (URL) of the remote document.

- Mailto links.

```
<A HREF="mailto:richard@web-
trek.com"> E-mail Richard</A>
```

Mailto links are defined like links to other documents, but instead of sending the viewer to a different page, the link lets them send an e-mail to the address specified in the link. How this is accomplished depends on the browser being used.

- Anonymous FTP links.

```
<A HREF="ftp://ftp.spoo
.com/spoo.zip"> spoo</A>
```

Anonymous FTP links are used to point to files located on FTP servers that allow anonymous connections.

Lists

Many types of list elements can be used in an HTML document. Some of the more popular ones are ordered and unordered lists, and the definition list.

These elements are defined by the <OL> </OL> and <UL> </UL> tags respectively. In an ordered list, each item is numbered; in an unordered list, the items are bulleted. List items are indicated by the tag <LI>, without an end tag. See example 1.

Definition lists are made up of terms and their definitions. It is enclosed within the tags <DL> and </DL>. Each term is defined by the tag <DT>, and each definition is defined by <DD>. Neither of these use ending tags. A term can have multiple defintions. The browser usually indents the definitions for each term. See example 2.

Images

One reason that the Web has become so popular is the use of images. Using image tags is fairly straightforward, and not dissimilar to using links. For example, this adds an inline image of a picture:

```
<IMG SRC="images/me.jpg"
HEIGHT=100 WIDTH=100 ALT="A
picture of me!">
```

The image element starts with the IMG tag, and has several attributes. The SRC attribute specifies the image file. The file can be in the current directory, anywhere else on the server, or even on another Internet site. Like the link element, you can use relative paths or absolute paths. If you link to an image located on another site, you just supply the full URL for that image file:

```
SRC="http://www.domain.com/
images/me.jpg"
```

The HEIGHT and WIDTH give the browser information about the size of the image in pixels. The browser immediately reserves the correct amount of space on the page for the image, allowing the rest of the document to load in the correct format, speeding up the document.

The ALT attribute specifies a text description of the image. This lets viewers with text-only browsers know what the image is, and helps people with physical limitations.

The ALT, HEIGHT, and WIDTH attributes are optional, but highly recommended.

Tables

Tables were officially introduced with the W3C HTML 3.0 draft, and included with the HTML 3.2 specification. Tables allow you to arrange text or images into rows and columns. Tables can have borders around them or not, and can be used to assist in the page layout of the document. See example 3 for a table, with two rows and two columns.

The <TH> indicates a table heading and the <TD> indicates table data. Generally the browser will put an emphasis on the table heading.

Although these are the only tags you need to create a simple, borderless table, there are many attributes that can be used to create more advanced tables.

You can add a caption to your table with the <CAPTION> tag. This goes right after the <TABLE> tag. A caption will place text over the table.

```
<DL>
<DT>Richard
<DD>My first name
<DT>R.
<DD>My middle
initial
<DD>It stands for
Robert
<DT>Klemmer
<DD>My last name
</DL>
```

Example 2

You can create a table with a border by supplying the BORDER attribute in the table tag. You create different sized borders by specifying a number, like: <TABLE BORDER=5>.

```
<TABLE>
<TR>
<TH>Heading one</TH>
<TH>Heading two</TH>
</TR>
<TR>
<TD>Data item
one</TD>
<TD>Data iem
two</TD>
</TR>
</TABLE>
```

Example 3

You can specify the width of the table with the WIDTH attribute. The width is either in pixels, or a percent of the current browser. A percent is better, since it is impossible to know the size of the viewers browser window. The WIDTH attribute looks like: <TABLE WIDTH=70%>

The WIDTH attribute can be used for columns as well, with the <TH> and <TD> tags. The width is specified in pixels, or a percent of the table width. Like table widths, it's better to use percent.

You can create a table that doesn't have an even number of rows or columns. For example, the first row with three items, and the second row with two items. One of the items in the second row needs to span two columns. You use the COLSPAN attribute, in the <TD> tag, to span columns:

```
<TD COLSPAN=2>Item
text</TD>.
```

You can span rows, too, using the ROWSPAN attribute with <TR>.

```
<TABLE BORDER=5
WIDTH=70%>
<CAPTION>My
Table</CAPTION>
<TR>
<TD>1st Col, 1st
Row</TD>
<TD>2nd Col, 1st
Row</TD>
<TD>3rd Col, 1st
Row</TD>
</TR>
<TD>1st Col, 2nd
Row</TD>
<TD COLSPAN=2>2nd
Col, 2nd Row, spans
2 col.</TD>
</TR>
</TABLE>
```

Example 4

Putting it all together in a table, we come up with example 4.

Notice that the second row uses COLSPAN=2, and there are only two <TD> tags. Since the second column of the second row spans two columns, the total for the row matches the three from the previous row.

There are many more features, but this should get you started having some fun with HTML!

New and improved

compiled by Esther Schindler

IBM may be undecided about the wisdom of Ralph Naders suggestion to make the OS/2 source code free—but some OS/2 vendors are not. At least a handful of longtime OS/2 shareware programs are now available for free... and some of them are pretty good.

We also have a few application upgrades that sound nifty. If you'd like to check them out yourself, write to `reviews@possi.org`, and Craig will help you get your hands on a full working copy.

LoraBBS source code

Marco Maccaferri has released the full source code of the LoraBBS Bulletin Board System version 2.99 under the GNU Public License. The source code can be compiled with the Watcom C/C++ 10.6 (or later) for DOS4GW, OS/2 and Windows, and with GCC for Linux.

The package is available from www.maccasoft.com; follow the links to the downloads page. No support is provided for this release, but if you work on it and want to drop the author a note, write to `macca@maccasoft.com`.

Simplicity for Java

Data Representations, Inc. announced the general availability of its flagship product, Simplicity for Java, a rapid application design tool for Java 1.1.

Written completely in Java, Simplicity lets developers build Java applications and applets interactively. Developers can click-n-drop Java Layouts, AWT Components, Simplicity's own extended components, and third party Java Beans into their applications. Simplicity features on-the-fly execution of Java source code, enabling applications to execute class declaration code, constructor code, method code, and event code as they are designed. This dynamic execution reduces the traditional, three step, code-compile-test software development process to a single step: Design. Every change that is made to an application's source code is immediately integrated into a working model of the program.

Simplicity also features Code Sourcerer, which interviews the user to determine what should happen in response to events and writes the appropriate Java source code. This allows Simplicity for Java to be used by both experienced and inexperienced Java developers.

Simplicity for Java comes with an Integrated Design Environment (IDE) which organizes all of the components of a project. A project can include multiple applications/applets, images, sounds, Java source/class files, HTML files, Java Beans, and any other data files related to a project. The Simplicity IDE also relieves the user from worrying about path names on both a local file system and on a web server.

Simplicity for Java is written completely in Java 1.1 to run on any Java-enabled platform, including OS/2 Warp, Solaris, Windows 95/NT, HP-UX, Linux, and many others. Simplicity for Java has been submitted for 100% Pure Java certification.

A free tryout version of Simplicity for Java is available from Data Representations' Web site, `www.datarepresentations.com`. Simplicity for Java is $89 for a single user license.

Syslog

The new Unix-like Syslog-Tool 1.0 (PM-based) is available. It includes a C-Lib, REXX DLL, and executable "logger" command. You can log system activities on remote machines on your local workstation. Syslog requires TCP/IP. Syslog is available as freeware.

For more information, contact `shomburg@ibm.net` or visit `http://dienstleistungen.freepage.de/shomburg`

GLCube

Aquila Technologies announced the release of GLCube, a Rubik's cube type game for OpenGL and OS/2.

Billions of wrong combinations—but only one correct one! Now with GLCube you can try to solve the cube on your computer with advanced OpenGL features such as lighting, shadows and texture mapping. You can solve the cube on your own, get the computer to autosolve for you, or let the computer play by itself. A full-screen mode acts as a unique screensaver.

The application is shareware with registration available through BMT Micro for $10. Computer auto-play is restricted to registered users.

More information can be obtained from the Aquila Web site, `http://webhome.idirect.com/~aquilat/` or through email, `aquilat@idirect.ca`.

Web/2 1.3r

Web/2 is an easy-to-use and easy-to-setup Web server for OS/2. It has a lot of features, such as CGI and SSI support.

This new version features bug fixes, multiple text counters, and virtual domain support.

You can download Web/2 and other OS/2 utilities from `http://ozbbs.ml.org/dink`.

SnowStorm software

SnowStorm Software has made several of its applications available recently through BMT Micro.

Voyager, OS/2 Warp's Premier VRML V2.0 Netscape Plugin, lets you explore the Internet's vast worlds of VRML. Discover virtual Dublin, journey alongside the Mars Pathfinder, unearth the Aztec ruins, trudge through a tangled jungle, or orbit the moon. The possibilities are endless when you're aboard Voyager, come for a ride.

Voyager is fully automated, just plug and play. Voyager was designed to be an easy to use VRML viewer, no need to fiddle with hard to use controls. Voyager automatically animates the entire model and takes you on a tour between the predefined positions, just as the author designed and intended.

Voyager is a native, 32-bit, multithreaded, optimized, Netscape for OS/2 Plugin. Built around OS/2

Warp's OpenGL 3D rendering system, Voyager achieves high quality and performance. With OS/2's power, your journey begin as textures and inlines are integrated to create a final, complete world.

Worlds may be viewed under Netscape either as full size windows, or as embedded HTML plugins.

True to its name, Voyager provides dynamic VRML V2.0 rendering including detailed geometry, multipoint lighting, texturing, smoothing, materials, extrusions, animations, viewpoints, inlining, events, and sensors. These capabilities enable hundreds of World Wide Web Worlds to come to life.

Voyager provides extensive support for legacy VRML V1.0 models in addition to the above VRML V2.0 features.

Price: $29

Numerical Assistant Pro is a 32 bit, multithreaded calculator for OS/2 Warp. NAP integrates all your everyday, even your every-other-day numerical needs... plus, advanced features. NAP supports 23 major scientific functions including:

Trigonometric: sine, cosine, tangent, arcsine, arccosine, arctangent, arctan2(x,y), sinh, cosh, tanh

Logs: base 10, base e

Numerical integration and derivatives: User specified formulas may be integrated or differentiated numerically

Other: Exponentials, base 10, base e, and User specified Square Roots, Cubed Roots, and X Roots Factorials Inverse Absolute Values

Multiple radial coordinates: Degrees, Radians, Gradians

Fixed or scientific numerical formats: Financial computations, Compounding Periods, Double Declining Balance Depreciation, Effective Interest Rates, Future Value (fixed payments or lump sum), Interest Rate (from future and present values), Loan Payments, Present Value (fixed payments or future values), Straight Line Depreciation, Sum-of-the-years'-digits Depreciation, Term Deposits

Customizable equations: Unlimited number of user defined equations may be added.

You can also add your own. Simple constant definitions right through to multivariable nested formulas incorporating existing functions as well as other customized functions will give phenomenal capabilities.

Nap has mouse and keyboard support, and on-screen keys for all major functions.

Direct Algebraic Logic Editing (enter your formula as you would read it, eg. abs(36*sin(46/3))/2.4)^3)

Enhanced error checking reports all mathematical errors and causes.

On-the-fly interface manipulation.

Price: $19

Escape GL V2, OS/2 Warp's hottest OpenGL screen saver, incorporates some of today's most impressive technology and 3D effects. They include:

New OpenGL Modules. Over 35 animated effects for you to enjoy, incorporating cutting edge technology including transparency effects, animated turbulence, and texture mapping. Sit by the campfire, drift across the ocean, or ride a raging roller coaster.

Texture Mapping. Many of Escape GL V2.0's new modules incorporate full texture mapping enabling you to display your favorite image on a 3D model. Choose from PhotoCDs, your favorite JPEGs, or the hottest images from the Internet. Plaster them on a Texture Cube, the Magic Carpet, or reflect it off of a shiny cube, all in 3D!

VRML V2.0! Escape GL V2.0 adds support for VRML V2.0 Worlds including texturing, animations, viewpoints, inlining, full lighting, extrusions, and more. Now bunnies, monster trucks, virtual parks, fighter jets, or even haunted houses are within easy reach. Experience the included VRML V2.0 models or browse the web for some of the thousands available.

Escape GL V2.0 utilizes OpenGL for OS/2 Warp to achieve some of the industry's most impressive 3D effects. Atmospheric dispersion causes sharks to fade into the ocean depths, dramatic perspective makes you feel as if you are actually riding the raging Roller Coaster, antialiasing createssmooth soothing 3D lines, and animated turbulence allows campfires to flicker and fade. All models use full 24-bit color rendering and many have elaborate realistic lighting. Escape GL V2.0 then goes further utilizing complex 3D smoothing, particle explosion, soft body objects, fractal terrains, texture mapping, transparency effects, and dynamic simulations to achieve one of the most comprehensive 3D screen savers.

Price: $25.

FreeType

The FreeType engine is a free and portable TrueType font rendering engine. It has been developed to provide TT support to a great variety of platforms and environments.

FreeType (`www.freetype.org`) has been updated to release 1.1; plus, the TrueType DLL for OS/2 2.x and OS/2 Warp 3/4 has been updated to beta II (`www.freetype.org/ft_os2`). This new beta adds support for large Unicode fonts and Greek support.

.programming (cont from page 19)

tify today given the intuitiveness of the user interface of todays applications.

You have to figure out a solution that will produce gains in productivity for the customer based on a time horizon of support and what the expected life of their software will be. If the components of their solution are obsolete before they roll it out, the output from their investment will be less than optimal. You want to try to minimize the long term costs over the life of the system if at all possible for the customer and offer them some alternative solutions.

Once you give sound technical information to the customer regarding the bad news of legacy code, it allows them to make a business decision and get on with their business.

type Letters

Letters to the editor should be sendt to editor@possi.org, or mailed to:
Editor, extended attributes
Phoenix OS/2 Society, Inc
5515 N 7th St, Ste 5-133
Phoenix, AZ 85014-2585

We reserve the right to edit all letters for content, readabilitiy, and length.

I am a member of the Phoenix Society, although I don't have a PC.

Thanks for Esther Schindler's article in this month's *extended attributes*. You were raised to the level of "Hoch Journalist" when you quoted the Berryman's "A chat with your Mom." Unfortunately, you left out their URL (`http://members.aol.com/BERRYMANP/`). Just curious how you learned about them. I encountered them approximately twenty years ago, when they played the bars in Madison, WI and the admission was a 25¢ "donation."

Rob Nelson

Software, what choice?

Hey, I wrote a while back urging you to look at Software Choice, since it seems to me this is an important new development for OS/2 users that I have not seen reviewed or written up anywhere. Since I am a subscriber to *extended attributes*, I would like to see somebody there look at it. I did notice in your interview that Richard Seibt had also called it to your attention. Okay, I am not surprised that you did not listen to my note, but how about Seibt? To use your phrasing, what is he, chopped liver?

I think there is a way to make sense of what seems to be a ridiculous push by IBM in a losing direction with Java. I also noticed earlier this week, in the Wall Street Journal, that IBM has just ended its agreement with Motorola on PowerPC development. There go the AS400 and RS6000. Gee, what next, all Intel? But IBM has the basic RISC patent, and what if they bring out a new line of CPUs which will be lightning fast on Java? I remember that some years back, there was a move to bring out a CPU that would have as its basic instruction set the pseudo instructions for UCSD Pascal, but as far as I know, the movement died. But now, if there is an instruction set for the Java virtual machine, what if somebody designed a real CPU for those instructions? Might be faster, right? It would not need the virtual machine.

I would still like to see somebody write up Software Choice, and just urge you to take a look at it. I have subscribed to it, and it does seem to me that IBM is taking it seriously. And that is what Seibt told you.

Ernest Knipp

Top ten shareware

by Pete Norloff

Here's the top ten downloads for the last month, from Pete Norloff's OS/2 Shareware BBS.

IDEDASD.EXE, 120K, 5-01-98

IDE drivers for greater than 8.4Gb disks. Includes additional documentation on removable media and support for caching file system support for removable media. Updated April 27, 1998.

OS2UNDOC.ZIP, 44K, 4-14-98

Undocumented Features of OS/2 (INF). This INF file collects a variety of information concerning undocumented APIs and features of OS/2.

DOSBOX.EXE, 135K, 3-13-98

Latest TCPIP fixes for DOS Sessions with Warp. Type DOSBOX /? at the command line to get instructions on how to apply these fixes. This file is recommended for use with RealPlayer 5.0, for example.

ASSOEDIT.ZIP, 70K, 4-23-98

Association Editor v1.6. Allows you to inspect or modify associations set for file types and file filters. You can add new associations, remove old ones, and change defaults associations. Also, you can add new filetypes. Freeware.

GATESNDC.JPG, 35K, 4-25-98

Bill Gates in Washington DC. Here's a photo of Bill Gates (& Scott McNealy) in Washington, DC. They say a picture is worth a 1000 wordsÖ.

TAME334.ZIP, 105K, 3-25-98

TAME v3.34. Speeds multitasking of DOS applications in Windows, OS/2, Windows 95, Windows NT, DESQview, Double DOS, and many more.

WIN32OS2.ZIP, 797K, 4-22-98

Win32-OS/2 project. Wptool20.zip has been replaced and isn't in the file collection any more.

RAMFS.ZIP, 73K 3-17-98

RAM Drive Software for OS/2. Installable File System (IFS) Drive, to create a RAM Drive under OS/2. It can use HPFS or FAT formats. It is freeware. Should be used in place of OS/2's VDISK.SYS driver. Dated January 1998.

WIN32S1.ZIP, 2326K, 5-04-98

Win32 files for WinOS2.

The Phoenix OS/2 Society, Inc

The Phoenix OS/2 Society is a computer user group dedicated to OS/2. We have been publishing our award-winning magazine, *extended attributes* since August of 1994, and we have members all over the world.

Yes, this is a user group publication, and that sometimes shows; however, that's also an advantage, since you get real-world feedback about OS/2 and OS/2 products from other users, not just jaded, cynical journalists.

How useful will it be to join the Phoenix OS/2 Society if you aren't in Arizona? We see the Phoenix OS/2 Society as something akin to the National Geographic Society or the Smithsonian; while most members only see a magazine, you're actually a member of a society, and can participate in its activities when you happen to be in the area.

Even without activities that take place in Phoenix, Society membership includes product discounts that alone could make membership worthwhile. Taking advantage of one such discount could easily save you the entire cost of membership, giving you a "free" subscription.

Plus, the Society is prominent in the computing community. We are *already* heard by IBM; they listen to what we say. Several IBM executives get *extended attributes*. They don't get it for the "club news"—they use it to learn what OS/2 users really care about. And they respond to what they read.

You're not just getting a magazine. You're getting a voice.

If you would like to continue to receive the magazine, fill out the membership card in the center

Invites you to join

Phoenix OS/2 Society, Inc
5515 N 7th St, Ste 5-133
Phoenix, AZ 85014-2585

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